TRANSPORT PLANNING TRENDS

The Hobart Experience

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SUMMARY

Transport planning has been under criticism, and has changed in nature and approach since the 1960's. This thesis attempts to describe these changes and relate the Hobart experience to them.

The thesis is arranged in three chapters.

Chapter 1, the Introduction, documents the increasing recognition of the interactions between the transport system and other elements of the urban environment, a recognition that is reflected in the changes in transport planning described in Chapters 2 and 3.

In Chapter 2 the view is documented that the engineering dominated transportation study approach has recently been replaced by a more comprehensive approach to transport planning. The demand orientation has been (or is in the process of being) replaced by an approach that recognises supply limitations and the environmental and social implications of transport decisions. It is proposed that transport planning should be concerned with environmental and social goals rather than impacts, and four planning themes are introduced. These are:

1. Optimum accessibility to opportunity and resources for all sections of society while promoting a land use configuration consistent with these and other community aims.

2. A transport system that does not impinge upon the perceived positive aspects of the urban environment and is instrumental towards enhancing them.

3. The means for all sections of society to satisfy their transport needs whether or not they have the use of a private motor vehicle.

4. A transport system that makes good use of existing resources and can adapt to meet demands imposed by changing resource availabilities.

Chapter 3 is concerned with the Hobart experience, and after reviewing the relevant publications five watersheds in the development of transport planning in Hobart are identified:

- The Hobart Area Transportation Study, 1964.
- The Hobart Transportation Revision, 1970.
- The Review of Northside Freeway, 1972.
- The considerations of the Traffic Management Committee, 1977.
- The Derwent Region Transportation Study, 1978-79.

The 1964 study was typical of the transportation study genre, and one of the first to be conducted in Australia. The 1970 Revision recognised the existence of associated issues: the cracks were beginning to appear in the functional approach. The Northside

Freeway Review contained investigations of environmental and social impacts of freeway alternatives. The organisation of low cost changes to the transport system within the current policy framework, termed Transportation Systems Management, was illustrated in Hobart by the considerations and recommendations of the Traffic Management Committee, 1977, although admittedly this was only in response to a particular conceived problem (traffic congestion after the reopening of the Tasman Bridge). Since the Derwent Region Transportation Study has not yet been completed, it is impossible to comment on anything other than the study specification. This indicates a complete change in approach, and the themes proposed in Chapter 2 are shown to be represented in the Derwent Region Transportation Study. It may well be that as it was in 1964, in 1979 transport planning in Hobart will be at the forefront of the development of transport planning in Australia.

Thus the material presented in Chapter 3, including evidence of the effect of accessibility on residential development, of the destruction of low cost housing, of the ignored implications of generating and meeting parking demand, is an illustration that the evolution of transport planning in Hobart has been a reflection of the trends described in Chapter 2.

The explicit adoption of the four themes is proposed as a recognition of the role of transport planning in environmental management.

CONTENTS

1. INTRODUCTION

In a paper entitled "The Urban Transportation Problem Updated" presented at a 1978 Transportation Research Board (U.S.A.) workshop it was stated that

> "When the urban transportation problem was first articulated in the late 1950's and early 1960's, the principal concern was congestion, particularly during the journey to work, and the main policy issues centered around how to relieve it. Our conception of the problem was gradually broadened to incorporate environmental quality, mobility problems of the transportation disadvantaged, the question of equity, goods movements, and, most recently, fuel shortages and transit deficits[1]".

This statement indicates a developing view of transportation by those involved in transport planning: a view once dominated by traffic considerations but increasingly recognizing the more interactive role of transportation in the urban system. This development was emphasized in a recent collection of Australian urban transport economics writings, where it was stated that "the urban transport problem is an integral part of the urban problem[2]".

In Britain the Buchanan Report *Traffic in Towns*, published in 1963 made a major point of the effect of traffic on other aspects of the urban environment. The concept of "environmental areas" and ways in which they might be protected from the encroachment of traffic were emphasised in this Report. Of the thrust of transport planning at that time, the Report states: "This concentration on the movement of vehicles has tended, we think, to distort or obscure the basic environmental objectives of town planning[3]".

Eleven years later, in 1974, the British Independent Commission on Transport, chaired by Bishop Hugh Monefiore reported that

> "A solution to our problems depends not so much upon a detailed knowledge of the transport system as upon a fundamental understanding of the ways in which transport, which should be the servant of the community, tends to shape the community geographically, economically, socially and environmentally[4]".

This statement was an acknowledgement of the wide ranging interactions involving transportation, and represents a continuation of the approach embodied in the Buchanan Report, with perhaps a greater recognition of social and economic factors.

The development of these considerations in the United States of America was described in a recent U.S. Department of Transportation Report, in which it was stated that

> "In the 1960's, pressures from outside the planning process raised new issues which planners were forced to address. Issues of dislocation and disruption, environmental impacts, citizen participation, social concerns such as transportation for the disadvantaged and most recently energy shortages were added to the range of concerns for the planning process[5]".

For example, the Williamsburg Conference in 1965

> "highlighted the need to identify urban goals and objectives which should be used to evaluate urban transportation plans. It emphasized that many values may not be quantifiable but should not be ignored[6]".

The development of a comprehensive view of transportation has led to an interdisciplinary approach in the consideration of transport-related issues. Thus, according to Hensher "in recent years there has been an extensive interdisciplinary effort in the search for an

understanding of urban transport issues[7]". However, a 1978 Australian Bureau of Statistics Discussion Paper states that "yet at present the social and environmental costs and benefits of transport activities and planning are unknown[8]", pointing to a continued and expanded role for environmental studies in transport research.

The broadening of approach to transport issues has been reflected in Hobart by the nature of the professional study teams for the various Hobart transport studies. The team for the 1964 study consisted entirely of engineers, there was one non engineer on the 1970 Revision team, and the Study Specification for the Derwent Region Transportation Study (1978-79) lists economics, engineering, environmental planning, human geography, land use planning, operations research, social planning and transport planning as being represented on the study team[9].

The change in emphasis from the functional to the comprehensive approach to urban transport planning is described in this thesis. Recent trends are considered in the next chapter which includes a discussion of the criticisms of the functional approach and the extent to which these have been answered by recent changes. This chapter concludes by proposing four themes for transport planning which, it is contended, provide an appropriate framework for the development and evaluation of planning objectives for particular studies. The four themes effectively place transport planning in the context of environmental management.

The Hobart experience of transport planning is reviewed in the third chapter with reference to the trends described in Chapter 2. Some

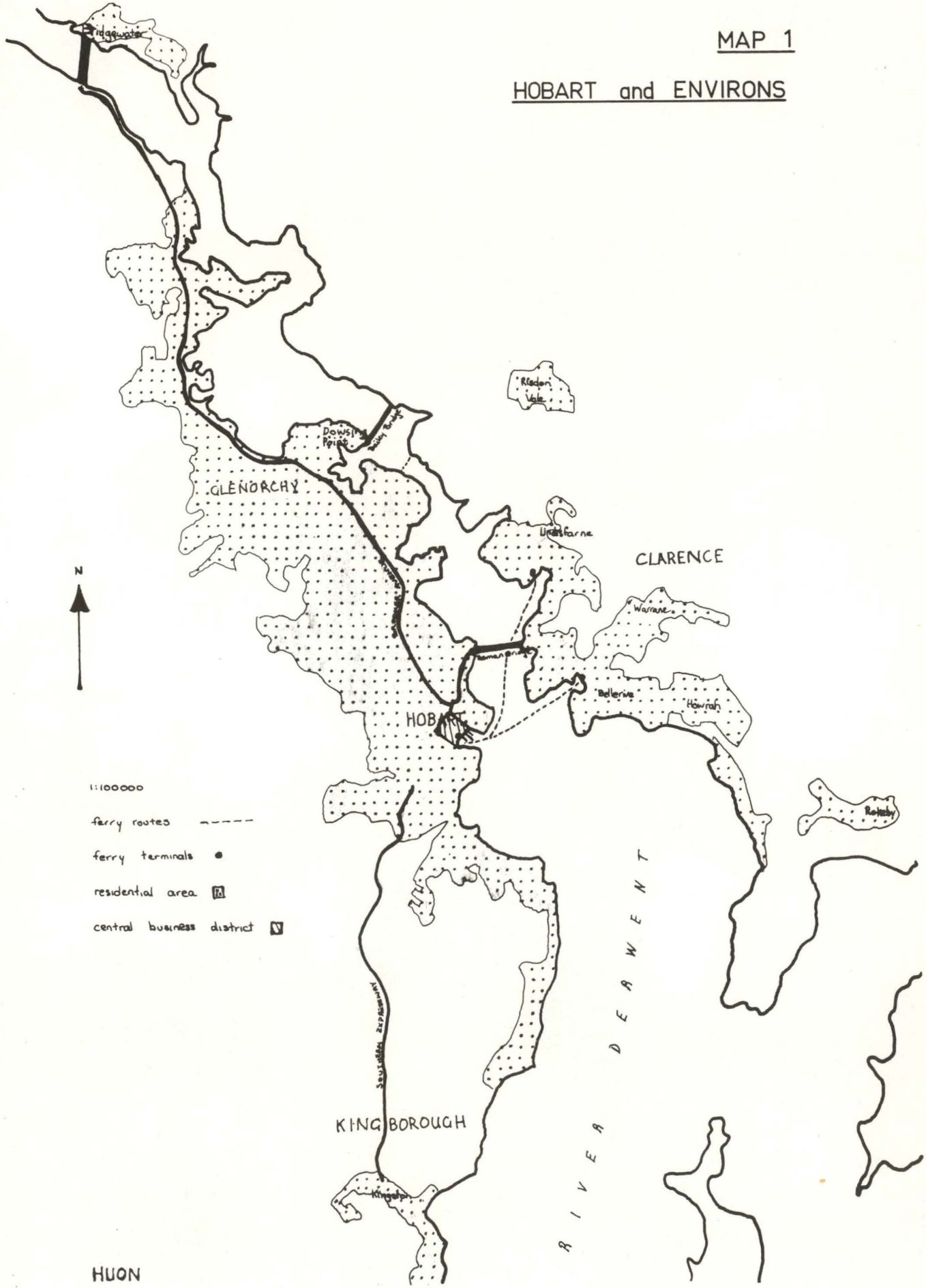
material is introduced to illustrate the effects of the application of past planning approaches, and current initiatives are discussed in relation to the four themes.

Some thoughts on the institutional problems associated with transport planning are included in a Post Script. These issues cross the boundary from planning to policy and implementation and so although of interest, particularly for further studies, they are not really within the scope of this thesis.

Throughout this thesis reference is made to various geographical areas and features, and their location is given in the following two maps:

- Map 1 includes the area which, in this thesis, is referred to as "the Hobart area". It identifies the municipalities and the eastern shore suburbs, together with the locations of the bridges across the River Derwent and the ferry routes that were used during the repair of the Tasman Bridge.

- Map 2 provides details of Hobart's central city area.


MAP 1
HOBART and ENVIRONS
Bridgewater
GLENORCHY
Dowsing Point
Risdon Vale
Lindisfarne
CLARENCE
Warrane
Bellerive
Howrah
Rokeby
HOBART
N
1:100000
ferry routes
ferry terminals
residential area
central business district
KING BOROUGH
Kingston
HUON
RIVER DERWENT

MAP 2
HOBART CITY CENTRE

REFERENCES

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2. CHANGES IN URBAN TRANSPORT PLANNING

2.1 Introduction

This chapter contains an account of transport planning in a period of change, with an emphasis on changes that have occurred in Australia. It provides points of contact between general trends and the local experiences described in the next chapter, and a yardstick by which local innovations can be measured.

The objectives are to

- outline the approach that has dominated urban transport planning in recent times
- identify issues of contention that have been raised by critics of traditional transport planning approaches
- review recent developments in transport planning
- assess the changing emphasis of urban transport planning with respect to the criticisms of recent approaches
- propose a set of themes for future transport planning.

This chapter is arranged in six sections, the introduction and one section for each objective.

2.2 Traditional Transport Planning: An Outline

Objective: to outline the approach that has dominated urban transport planning in recent times.

Urban transport planning as a unique and separate exercise has a relatively brief history of some twenty years[1]. The approach that evolved in the 1950s and continued through until this

decade led to the production of the Transportation Studies, involving a forecasting procedure and a plan to meet forecast travel demand. The forecasting procedure consisted of a given land-use plan and a four stage sequential model of traffic

- trip generation
- trip distribution
- modal split
- route assignment[2]

The objective was one of reducing road congestion given the conditions of sustained urban growth and rapid increase in car ownership[3]. The major attempts to meet this objective were by long range capital investment programs, mainly in the construction of freeways, major roads and parking facilities.

The Sydney Area Transportation Study (1972) was, perhaps, the last major Australian study of this genre. A central feature was the use of models to make traffic projections to the year 2000. The major recommendation was for a "grid pattern" of freeways to cope with this projected demand: 550 new kilometres of freeways and 240 kilometres of major roads. The proposed highway and parking systems would cost $2481 million compared with $1492 million (1971 dollars) for the development of railway, bus and ferry systems[4].

The transportation study approach has been characterised by an emphasis on numerical information and analysis, engineering dominance in procedures, staffing and solutions, a bias towards roads in preference to other modes, and solutions involving capital works rather than operations and/or demand management[5].

This is generally known as "traditional transport planning", in which "The urban transport problem was conceived as something which might be 'solved', given enough money to build the facilities which model-based projections of future demand indicated to be 'needed'"[6].

2.3 Criticism of the Traditional Transport Planning Approach

Objective: to identify issues of contention that have been raised by critics of traditional transport planning approaches.

"Basically the rejection phase is characterised by an effective criticism of the political, social and environmental assumptions of the planning process in addition to major debate over technical issues"[7].

As the environmental and social consequences of unrestrained growth in the volume of motor vehicles and the magnitude of their support systems have become increasingly untenable to those who work and live in the cities, there has been mounting criticism of the traditional transport planning approach[8].

Fisher[9] has described three major issues of contention:

- present patterns of behaviour are projected
- acceptable solutions have not been produced
- the conception has been too narrow.

Firstly, the projections are based on what people do now. The present system contains many inequities: the young, the aged, the handicapped and the poor in many cases have few choices and are "captives" to the public transport mode,

which constrains the number and distribution of their trips; the relatively affluent live in the outer suburbs, have multiple car families and are major consumers of arterial freeways, which impinge on areas occupied by non users; and investment in public transport has, by and large, benefited the affluent rather than the underprivileged[10]. Because the disadvantaged have constrained travel patterns, any projections based on the *status quo* place them in a relatively more disadvantaged position. Thus inequities become accentuated.

This challenge points to the social dimension in transport planning and it becomes clear that there are social assumptions which are implicit in the goals of any transport policy. These are generally expressed in terms of "meeting community needs", but this is far from satisfactory because there is never any attempt to determine community needs, and the more specific democratic ideals of equity of accessibility to employment and recreational opportunity have never been aims of the traditional transport study.

This consideration of the social dimension leads to the second major challenge to traditional transport planning: it has manifestly failed to produce acceptable solutions.

The solutions have not been acceptable in the socio-political sphere: politicians, who accept or reject the proposals of the transport studies must respect the wishes of the electorate to retain their jobs, and when these proposals result in the expenditure of vast sums of money in ways which do not have consensus support, they react expeditiously (and who would argue not responsibly?).

Traditional transport planners may answer this challenge by saying that they have invited some degree of community participation. However, this has, in the past, been confined to written submissions from interested groups and individuals. The type of groups and individuals who respond to this approach are not representative of the community; and written submissions are an establishment-type activity. Thus any participation is likely to be biased towards groups and individuals who benefit from the road construction programs.

The third major challenge to traditional transport planning really underpins the other two: it has been a narrow, functional activity in area that has quite comprehensive impacts. The land use - transportation interaction is an obvious example. The Sydney Area Transportation Study, after recommending vast increases in freeway and railway mileages merely notes that their impact on land use needs examination[11].

The narrowness of transport planning is typified by perfunctory statements about environmental and social impacts of construction programs[12]. In other words, there are no environmental and social goals, only environmental and social impacts of engineering structures. In any area such as transportation, which is not just a consequence of urban form and fabric but also a causing agent, this narrowness of approach is clearly inappropriate.

In discussing the existing planning environment, a recent Bureau of Transport Economics publication on transport planning in Sydney states that "Problems are narrowly conceived and the consumers rarely consulted"[13]. It is further stated that

"The unfortunate result of the DMR's* prominence in transport policy generally, has been the comparative neglect of alternative solutions to problems and alternative modes which lie outside the area of its responsibility"[14].

The issues discussed above are criticisms of the approach of traditional transport planning, but the methods, too, have been the subject of growing concern as evidenced by a recent paper in Traffic Engineering and Control, a conservative traffic engineering journal. The author attempts to answer the question: "Just how accurate are mathematical models?" and examines the errors that can be associated with each step of four stage models. A major conclusion of the paper is that "In the area-wide studies, the broad results are so general as to be self-evident and the specific results so inaccurate as to be virtually useless"[15].

It may be argued that a benefit of the traditional approach was the identification and reservation of transport corridors appropriate to a particular land use plan. However the self-evidence of the broad results (referred to above) indicates that this could be obtained without performing a transportation study. Whether it would, without the interest in long term planning stimulated by the advent of the transportation studies, is another question.

Thus in relation to the quotation at the beginning of this section, political, social and environmental assumptions as well as technical issues have been the subjects of contention in transport planning in recent years. In the next section recent developments in transport planning are reviewed, and the changing emphasis is assessed with respect to the criticisms raised here in Section 2.5.

* Department of Main Roads

2.4 Recent Developments in Transport Planning

Objective: to review recent developments in transport planning.

The criticisms of traditional transport planning outlined in the previous section are being answered in two ways and Gwilliam[16] identifies these areas of analysis that have dominated the urban transport literature in recent years:

(i) demand forecasting models

(ii) project evaluation procedures.

Both have stemmed from the emergence of economists on the transport planning scene. The advances in demand forecasting models do not alter the traditional transport planning approach: "The temptation is to become progressively more sophisticated in the analysis of those problems with which we have experience. The danger in doing so is that our techniques become progressively less adaptable in the analysis of new problems"[17]. The theoretical advances in demand forecasting models can thus be seen to be an introspective reaction to challenge, a refinement of tools whose application in the traditional transport planning approach is being questioned.

An example of initiatives in this area of transport planning research is provided by a report, published in late 1977, of a workshop sponsored by the Australian Road Research Board and the Bureau of Transport Economics entitled "New Techniques for Transport Systems Analysis"[18]. The workshop was exclusively concerned with mathematical modelling, and in the Introduction it is stated that "You will note the considered omission of

evaluation issues, environmental consequences - and perhaps most importantly - land use factors"[19]. This underlines the emphasis in some quarters on planning tools and the lack of consideration of the appropriateness of their application (which is not to deny their appropriateness as an input in some studies, for example, studies of particular corridors or links).

The other major area of analysis identified by Gwilliam was that of project evaluation procedures. These can be divided into two groups: cost-benefit analysis and the analysis of unquantifiables. The essential problem of cost-benefit analysis has been eminently summarised by King:

> CBA traditionally looks at net aggregate benefit: a project can be supported (is "Pareto admissible"), and so can be compared with alternative projects, if some people gain and nobody loses. But if some people gain while others lose, there can be no guidance from CBA, as interpersonal comparisons of utility are not possible in simple terms. The ultimate admission of the limitations of CBA is in the Hicks-Kaldor criterion: a project can be supported if the gainers can compensate the losers, even if they do not. In other words, traditional CBA must ignore distributional effects.[20]

Ignoring these distributional effects can actually result in the poor subsidising the rich, as reported by Brittain in the case of the Washington Metro. "A new subway was planned and is being constructed, ostensibly to provide special benefits to the poor in the central city. Its benefits in fact accrue disproportionately to the affluent suburbs, while central-city residents pay the largest share of the costs"[21].

An example of social cost-benefit analysis is given by Foster and Beesley[22] for the Victoria Line, an addition to

the London underground rail system. The benefits were time savings to those affected by the investment, cost reductions to motorists in less congested running conditions or savings in bus operating costs, and the value of increased comfort and convenience.

For projects such as an addition to an underground rail system this evaluation of user benefits may be an adequate method of project evaluation; however, in other areas it is clearly lacking. The shortcomings fall into the domain of "unquantifiables". These are social and environmental factors that are open to public debate, and their influence can be made to prevail through the political process. On this point Hensher writes: "The Third London Airport Study, The Second Sydney Airport Study, The Boston Planning Scheme, The Opposition to Urban Freeways are all classic examples of contexts in which the rejection phase expressed itself"[23].

Various attempts have been made to bring the unquantifiables into some sort of technique of evaluation. Perhaps the first effective method was that of McHarg[24] who used a scale of three: good, medium and bad for a number of variables and produced a set of overlays which indicated the least harmful routes of proposed highways. This approach has been extended to digitised mapping where a computer stores the data and produces the overlays. There are obvious inconsistencies in assuming comparability between diverse criteria: some situations can have engineering - economic, social or environmental impacts that can dwarf any other considerations, and the overlay procedure gives no system of weighting impacts.

The checklist approach to project evaluation simply attempts to list social and environmental characteristics and whether they will be affected by the project, usually attempting to quantify effects wherever possible. A criticism of this method is that although parameters of environmental quality are identified, the cause-effect relationships affecting these parameters are not directly addressed[25].

Social and environmental characteristics can be given an impact rating for a variety of actions that constitute a proposed project. This can be arranged to form a matrix where each element represents the effect of a particular activity on a particular parameter. Of course, these parameters can often interact, and such secondary effects of activities can be overlooked.

This impact matrix approach has been extended through a consideration of the phases of transport planning: system planning, corridor planning, project planning, construction and operation. A "community value impact matrix" has been proposed, an impact matrix for each phase resulting in a three dimensional array[26].

The identification of environmental effects at different phases of the planning process is an advantage of this evaluation methodology. "It does little good to bring in an ecologist at the construction or operation stage of a project after most of the ecological mistakes have been made"[27].

A major problem with all of these evaluation techniques is that there is no system of weighting and rating the impacts that they

describe. A way around this problem, discussed in some detail by Hibbard and Millar[28], is to use a citizen committee to weight categories by allocating a given number of points between categories in an environmental overview, and between the environmental overview and the user benefits, as determined by a benefit-cost ratio.

This approach does not overcome the limitation that some impacts may be too large to express on the rating scale, and because of accumulating errors it could not be used to discriminate between projects that have close total scores. The authors do not discuss the composition of the citizen committee, on which the outcome of the process is critically dependent.

A more sophisticated theory on the evaluation of unquantifiables has recently been proposed by Davos[29,30]. He attempted to put evaluation in a social context and explored, using algebraic methods, trade-offs in priorities between social groups to evaluate different options in terms of aggregate social acceptability.

Although the work of Davos is not specifically related to transport planning, it is capable of application in this area of environmental management.

In summary, recent developments in transport planning have concentrated generally in two areas; the sophistication and refinement of mathematical modelling, and the formulation of attempts to evaluate social and environmental impacts of proposed projects, with the aim of determining the option that is most acceptable in terms of social and environmental criteria.

2.5 The Changing Emphasis of Urban Transport Planning

Objective: to assess the changing emphasis of urban transport planning with respect to criticisms of traditional approaches.

In the last section recent developments in transport planning were reviewed, and in this section an assessment is made of the changing approach of urban transport planning, in the light of the criticisms raised in Section 2.3. These were that it was too narrow, based on projecting the *status quo*, and did not produce acceptable results.

The developments outlined in Section 2.4, of refining mathematical models, of applying cost-benefit analyses, and of attempting to evaluate non quantifiables have not, in themselves, answered any of the challenges, except to some degree the last one. They have attempted to make the results of the planning process more acceptable to the public without coming to grips with the basic issues that are involved: issues of social equity, environmental quality, the possibility of different life styles and land use patterns, and the realisation of the limits of available resources. These issues are seen as impacts rather than the substance of goals.

However, in addition to specific developments there have been changes in emphasis and approach to the transport planning task.

Three areas in which changes have occurred since the late 1960s have been described by Fisher:

> A nation-wide push towards a multi-modal approach to transport has both raised the importance of Transport Ministries relative to functional agencies, and led to some successful, albeit limited, steps to transport planning proper;

> The Australian Government has widened its involvement in transport funding to almost, if not all, modes and matched its funds by a positive involvement in both planning and programming;
>
> There is a realisation that the planning cannot be effective as a private technical and engineering function; instead it must involve the public and other professions in procedures, few of which are susceptible to computer modelling[31].

These areas of change are considered in relation to the Hobart experience in the next chapter, and this section explores some of the "steps to transport planning proper" as evidenced by some recent Australian studies.

Section 2.4, Recent Developments in Transport Planning, was concerned with the third area of change mentioned by Fisher. The second area, that of federal funding, has a parallel in the United States, where the recent emphasis on Transportation Systems Management may be argued to be part of a system of federal controls on its funding programs. T.S.M. is also discussed in this section.

In 1975 the Urban Mass Transportation Administration and the Federal Highway Administration in the U.S.A. issued a series of joint regulations which focused attention on traffic management and the process used to implement it. "These regulations require the transportation plan for an urban area to consist of two parts: a long range and a short range element. The latter is called the Transportation System Management (T.S.M.) plan and is supposed to identify low-capital projects that make more efficient use of existing transportation facilities"[32]. The regulations require urban areas to more fully use their existing

infrastructure and capacity before they seek federal assistance for the development of additional facilities[33]. The responsibility for conducting T.S.M. studies was given to metropolitan planning organisations,who, in the opinion of some transportation planners, "had neither the resources nor the authority to carry (them) out"[34].

Table 1 presents projects that were chosen in more than 50% of first year T.S.M. plans.

From Table 1 it can be seen that T.S.M. is a collective term for a number of established techniques that do not involve major construction. It may be argued that emphasis on T.S.M. in the United States could stem from a desire of the Federal Government to reduce funding for the development of additional facilities.

Many of the measures listed in Table 1 have implications extending far beyond the short term, and this points to the need to view T.S.M. proposals in the perspective of long term regional goals. This position was taken by a number of speakers at a recent T.S.M. conference[35](in the United States) who "noted the need to more fully integrate the short-range TSM planning process with planning for the future or for major capital investments".

In the report of the conference, to which reference was made above, it is evident that a number of anxieties and a level of confusion existed among transportation planners with regard to T.S.M. two years after the issue of the regulations.

Table 1

Options Most Often Chosen in T.S.M. Plans
(Percentages indicate the proportion of the plans suggesting an intent to study or pursue implementation of the option)[a]

A. Actions to Ensure the Efficient Use of Existing Road Space Through:

Traffic Operations Improvements
Channelization of Traffic (80 percent)
One-way streets (50 percent)
Better signalization and progressive timing of traffic signals (100 percent)
Other traffic engineering improvements (in this option is included the all-encompassing term "intersection improvement", which was mentioned in many plans) (100 percent).

Preferential Treatment for Transit and Other High-Occupancy Vehicles
Reserved or preferential lanes on freeways and city streets (60 percent)
Bus pre-emption of traffic signals (50 percent).

Appropriate Provision for Pedestrians and Bicycles
Bicycle paths and exclusive lanes (80 percent)
Separating pedestrian and vehicle traffic (50 percent).

Management and Control of Parking

Changes in Work Schedules, Fare Structures and Automobile Tolls to Reduce Peak-Period Travel
Staggered work hours (50 percent).

B. Actions to Reduce Vehicle Use in Congested Areas Through:

Encouragement of Carpooling and Other Forms of Ride Sharing (70 percent).

C. Actions to Improve Transit Service Through:

Provision of Better Collection, Distribution and Internal Circulation of Service (90 percent)

Greater Flexibility and Responsiveness in Routing, Scheduling and Dispatching of Transit Vehicles (RUCUS mentioned the most) (80 percent)

Provision of Extensive Park-and-Ride Services from Fringe and Transportation Corridor Parking Areas (60 percent)

Provision of Shelters (80 percent)

D. Actions to Increase Internal Transit Management Efficiency, Such As:

Improve Marketing (90 percent)

Establish Maintenance Policies that Assure Greater Equipment Reliability (50 percent)

[a] From Meyer, M. 1977
TSM: An Expanded Role for the Transportation Engineer. *Transportation Engineering*, Nov. 1977, pp. 37-40.

Has T.S.M. contributed towards answering the criticisms of traditional transport planning? Not really; it provides mechanisms for change once the need for change has been determined, but does not in itself involve any changes in transport planning approach. Moreover, according to Hensher: "TSM frequently imposes significant redistribution of costs and benefits, involving inequities. In total, for all TSM schemes, this is likely to be quite substantial"[36].

T.S.M. has not been institutionalised in Australia as it has been in the United States although examples can be found of its application here and this point is pursued in the next chapter dealing with transport planning in Hobart.

The changing emphasis of transport planning in Australia is evidenced by a number of recent studies, and in the remainder of this section, some of these studies are discussed in an attempt to determine the extent to which criticisms of the traditional approach (see Section 2.3) have been answered.

The Geelong Study is an example of the traditional approach, a challenge, and a reaction to that challenge. Between 1970 and 1973 a transport study was undertaken for Geelong. The traditional demand-oriented approach was used, projecting population, car ownership and usage. Three major road alternatives were proposed. These were increasing the capacity of the present road system, including the construction of a western ring road; constructing a freeway running roughly north-south through the city; and constructing a freeway to the north and west of the town and improving arterial roads.

It was proposed, from a traffic engineering point of view that the central freeway alternative be adopted. Considerable interest and controversy was aroused in Geelong with the publication of the report, and in 1974 an environmental and social benefits and costs study[37] was commissioned. This study was to evaluate the three alternatives proposed earlier, and part of the brief emphasised a requirement for public involvement, to ensure that the final recommendation had a wide degree of public support.

A number of social and environmental areas were defined and the three alternatives were rated in each area. Alternative 3 (the freeway skirting Geelong to the north and west) rated highly in all areas and received broad public acceptability. Alternative 3, with some minor modifications, was thus recommended for adoption.

The Geelong Study is an example of the transition in transport planning. The first phase was typical of the traditional planning approach; a demand oriented study aimed at accommodating unconstrained traffic growth, assuming the present pattern of land-use. The recommended central freeway did not meet with community acceptance, and the narrowness of the planning approach was exposed. The challenges that were raised resulted in the second phase of the study which carried out a social and environmental evaluation of the alternatives generated by the traditional study. A checklist of social and environmental areas was used, and since alternative 3 rated consistently highly, the Consultants were spared the necessity of performing any trade-off analyses. Of course, in theory, an alternative can rate highest in a number

of interacting areas when viewed separately without retaining that position from the point of view of the system as a whole, although it is not suggested that this would have been the case in the Geelong study.

Thus the traditional transport planning assumptions remained, and were the foundation of the proposals generated in the first phase and evaluated in the second phase. The fact that social and environmental criteria were used with a high degree of public involvement in the evaluation procedure did not affect the assumptions used to generate the alternatives. It performed the political function of determining which of the restricted choices was most acceptable to the public, and through public involvement gained support for that choice. People are more committed to a decision that they feel they have helped to make.

A more comprehensive approach to transport planning has recently been described by Thompson for the Adelaide region[38].

The phases of decision-making are similar to those proposed by Bouchard, Lehr, Redding and Thomas[39] and consist of a strategy phase, a structure phase and infrastructure phase, becoming progressively more specific and dealing with smaller regions.

Through a program of public involvement and a consideration of the views of all sections of society, broad planning aims are established. Any constraints in the physical or social environment are then identified, along with their planning implications.

From these considerations "a series of alternative urban structures each optimised with its transport component can be postulated and

analysed for a range of attributes, principally accessibility, amenity, economy, social and environmental impact, political acceptability (all of which will be included in any self-respecting list of aims and objectives)"[40]. Hopefully, one structure becomes obviously preferable, and a strategy is developed to achieve it. The structure and infrastructure phases then follow in more detail and with shorter time horizons.

Thus the approach outlined for Adelaide by Thompson is to start from goals for the future of the urban physical and social environment and to develop comprehensive plans, with a transport component, to work towards these goals.

By apparently being based on a program of public involvement and a consideration of the views of all sections of society, there is a possibility of falling into the trap of planning for the *status quo*, and not recognising the need for flexibility.

It is quite possible that sections of society advantaged in the present social system could, by their influence in the media and community and other organisations, exert a powerful influence towards formulating goals that would preserve their position. Two of the objectives listed by Thompson indicate that this might in fact have happened:

> 5.1.4 Ensure that urban structure and transport systems promote economic viability of the private sector.[41]
>
> 5.1.12 Urban structure and communication systems should promote the best use of resources and should remain flexible to cope with changes, provided development at a necessary and logical pace is not hindered.[42]

In 5.1.4, the phrase "are compatible with" rather than "promote" would surely be more appropriate. One wonders who decides the "necessary and logical pace" of development in 5.1.12 which takes precedence over "the best use of resources".

This points to a failure in Thompson's approach to realise that planning is about people and their use of resources, and so it must be based on a social policy. When a social policy is not defined, planning can assume the inherent role of preserving and even accentuating social inequalities. This was one of the criticisms of traditional transport planning, and one that Thompson does not appear to have adequately answered.

Nevertheless, while Thompson does not actually say that transport planning in general can be used as a tool to achieve social and environmental objectives, that is the direction in which the approach he describes could lead.

The difference between this and traditional transport planning is emphasised in the statement that

> "road congestion can now be used as a respectable planning tool to achieve desired objectives[43]"

a statement that would have been heresy only a few years ago.

The City of Melbourne Strategy Plan provides another indication of the changing emphasis of urban transport planning in Australia. The Melbourne Transportation Study[44], published in 1969, had as its major recommendation the construction of a grid system of 491 km of urban freeways. The City of Melbourne Strategy Plan, published in 1974 stated that "After considering

the Melbourne Transportation Study the State Government decided not to proceed with a number of inner area freeways[45]". Thus the Strategy Plan was produced during the period in which the transportation study approach was being questioned, and this is reflected in its completely different emphasis.

In the Strategy Plan seven broad goals were recommended. These were :

"1. Opportunity to find housing within a high standard environment.

2. Opportunity to find employment capable of providing an adequate income and self-satisfaction.

3. Opportunity for social interaction with the full spectrum of society.

4. Opportunity to live a full life in a healthy environment.

5. Opportunity to move in and through the city by convenient, safe and attractive means that are environmentally sympathetic.

6. Opportunity to find self-expression cultural or recreational activities.

7. Opportunity to participate in decisions that vitally affect one's life[46]".

Goal 5 is specifically concerned with transport, but as it is part of a set of urban development goals, transport developments are not considered in isolation from other interacting elements of the urban system.

Objectives were developed in various policy areas to give specific ways of working towards achieving these goals. The objectives for the transport sector were concerned with providing "comfortable and convenient travel to, from and

within the City of Melbourne, maximising public transport and minimising commuter car travel[47]".

Although the plan itself is open to criticism (for example, in its lack of consideration of land-use alternatives) the planning approach has the potential to come to grips with the challenges that have been raised to traditional transport planning.

Of course, a strategy plan is essentially "broad brush", and the City of Melbourne Strategy Plan provides a framework for detailed planning in contrast to the engineering detail provided in the traditional transportation studies. The absence of a blueprint for the transport system in 10 to 20 years makes planning co-ordination between agencies at the corridor and project level essential. Whether this co-ordination would occur in the present institutional environment is not a question addressed by the Strategy Plan. For example, an issue in which many state, municipal and individual interests are involved is the effect of urban freeways on residential areas. The Strategy Plan recommends the development of "controls which will ensure the minimum environmental and social impact resulting from freeway location and the establishment of arterial streets[48]". While this is the type of statement that everyone would applaud, the Strategy Plan does not offer much planning guidance, particularly in view of the institutional co-operation that would be required in the development of such controls.

Recent changes in transport planning approach have been illustrated in this section by the Transportation System Management regulations in the U.S.A., the Geelong Study, the methods used in Adelaide, and the City of Melbourne Strategy Plan. While differing from the traditional transportation study approach, it has been shown that each fails to answer the criticisms of the traditional approach or is open to criticisms from other directions.

2.6 Transport Planning Themes

Objective: to propose a set of themes for future transport planning.

Four transport planning themes are presented in this section, and it is proposed that they provide a general framework for the formulation of goals and objectives relevant to specific study locations.

The four themes are:

1. Optimum accessibility to opportunity and resources for all sections of society while promoting a land use configuration consistent with these and other community aims.

2. A transport system that does not impinge upon the perceived positive aspects of the urban environment and is instrumental towards enhancing them.

3. The means for all sections of society to satisfy their transport needs whether or not they have the use of a private motor vehicle.

4. A transport system that makes good use of existing resources and can adapt to meet demands imposed by changing resource availabilities.

These themes are concerned with accessibility, environmental quality, transport alternatives, and the implications of resource limitations.

In the area of accessibility, transportation along with land use affects the availability of various opportunities and resources to the community. These include employment, housing, essential services, and social and recreational activities. The accessibility provided by the transport system can also be used to promote changes in land use.

The second theme involves a recognition that, along with other elements of the urban system, transportation is part of the urban environment. Changes in the transport system can have a variety of effects on the urban environment, and thus environmental enhancement is a field in which transportation has an integral role to play.

Of course, environmental enhancement to one section of society may well be environmental degradation to another, and this is an area in which techniques such as the priority trade-off approach described by Davos (see Section 2.4) for environmental

management have application in transport planning.

As indicated in Section 2.2, traditional transport planning has been almost totally oriented to providing for the wants of the private motor vehicle user. This is evidenced by the recommendations of the Sydney Area Transportation Study and the Melbourne Transportation Study. In the Sydney study the proposed highway and parking systems would cost $2,481 million, compared with $1,492 million (1971 dollars) for the development of railway, bus and ferry systems[49]. In the Melbourne study highway proposals were costed at $2,221 million and public transport improvements (including an underground rail loop) at $335 million (1968 dollars)[50]. The situation in Hobart is considered in the next chapter but, with regard to public transport, it can be mentioned here that all passenger rail services have been closed, the ferry service only operates at peak periods and bus services are currently being reduced. In addition, there are no specialist facilities for bicycle users and the facilities for pedestrians are very limited.

The third theme makes specific mention of those without the use of a private motor vehicle because the evidence discussed above indicates that this section of society needs special consideration.

Other planning limitations are imposed on the availability of resources, both financial and physical. Grandiose construction programs can lose their feasibility when viewed from a political perspective. This is especially the case in Hobart because it

contains less than half of Tasmania's population and other areas demand significant bites from the limited financial cake.

A great deal of attention is currently being paid to energy issues, particularly in the transport sector as this is almost totally dependent on petroleum, the bulk of which in the next decade will have to be imported. A reflection of the concern felt about this question is the report on energy to the Australian Transport Advisory Council[51] and the research efforts of the Council, through State Authorities, into transport energy conservation measures.

A resource of a different nature that can be affected through transport policies is that of low cost housing. Due to the escalation of building costs, the present stock of low cost housing is the extent of the resource, at least in the medium term. Given that some sections of society require low cost housing, any destruction of this resource through the construction of transport facilities (roads, car parks, transit facilities) will incur a social cost to a section of society unlikely to benefit from that destruction.

The transport sector, then, may be viewed as a user of resources and it is this role that is the subject of the proposed fourth theme for transport planning.

The four themes are represented in the objectives of the City of Melbourne Strategy Plan and the Adelaide proposals to which references were made in the last section, although they are not identified in those studies.

The objectives arising from the planning process employed in Adelaide were:

"5.1.1 Provide maximum mobility for all sections of the community.

5.1.2 Promote an urban structure which provides the best living environment.

5.1.3 Promote an urban form which optimises the use of public and private transport for passengers and freight movement where each mode is most appropriate and efficient.

5.1.4 Ensure that urban structure and transport systems promote economic viability of the private sector.

5.1.5 Take account of existing urban structure and present expectations regarding future urban expansion.

5.1.6 Make best use of, and improve the standard of, existing transport facilities.

5.1.7 The importance of the City of Adelaide as a metropolitan and State focus should be recognised in terms of both urban form and transport systems.

5.1.8 Efficient access is needed between the metropolitan area, the rest of the State, and the rest of Australia.

5.1.9 Environmental and social impact of transport facilities on urban and rural area should be minimised.

5.1.10 The spatial priority, or access advantage, for various forms of movement should generally favour pedestrians.

5.1.11 Urban structure should be flexible with respect to transport systems to cope with events such as a possible fuel shortage which may significantly affect choice of transport mode.

5.1.12 Urban structure and communication systems should promote the best use of resources and should remain flexible to cope with changes, provided development at a necessary and logical pace is not hindered[52]".

An argument with Objective 1 is that accessibility is of more importance than mobility in terms of resources being available to the community. Mobility is the transport side of accessibility, but there is also a land use component that can play a part in making employment and recreational resources available to different sections of the community. Objective 1 should be changed accordingly.

Objectives 4 and 12 were criticised in the last section, where it was proposed that the word "promote" in Objective 4 be replaced by "are compatible with" and the qualifying phrase at the end of Objective 12 be removed. The "development at a necessary and logical pace" is a consequence of the other objectives, not an objective in itself, and certainly should not be used to give a development for development's sake bias to the planning process.

With these alterations it can be seen that Theme 1 is represented in Objectives 1, 5, 8; Theme 2 in Objectives 2 and 9; Theme 3 in Objectives 3 and 10; and Theme 4 in Objectives 4, 6, 11 and 12.

The objectives for the transport sector in the City of Melbourne Strategy Plan were:

"1. Encourage up-grading of suburban rail services to make transport to and from the City of Melbourne faster, more comfortable and more attractive.

2. Encourage off-street parking facilities at those suburban railway stations outside the Inner City.

3. Encourage up-grading of trams/buses, including equipment and fare structures, so people can travel to and within the City of Melbourne in more comfort.

4. Up-grade on-street tram loading and bus stop locations.

5. Up-grade arterial roads to optimise vehicle carrying capacities and safety measures.

6. Give preferential treatment to trams/buses/ taxis and pedestrians in selected locations.

7. Encourage shared use of parking spaces in locations where mixed uses occur.

8. Minimise adverse environmental impact of transport routes upon adjoining land.

9. Encourage a CBD vehicular by-pass system.

10. Discourage additional commuter parking.

11. Establish a system of pedestrian ways separated from vehicular traffic in the CBD.

12. Encourage additional short-term and retail related off-street parking.

13. Give preferential parking to residential areas.

14. Provide separated bicycle routes.

15. Encourage the servicing of and delivery to buildings beyond normal trading hours.

16. Take measures to implement the functionally classified road network.

17. Encourage the provision of a consolidated inter and intra city passenger transport terminal[53]".

Theme 1 is represented in Objectives 5, 9 and 12; Theme 2 in Objectives 8, 10, 11 and 13; Theme 3 in Objectives 1, 2, 3, 4, 6, 14 and 17; and Theme 4 in Objectives 7, 15 and 16.

Thus although the objectives for Adelaide and Melbourne were framed to deal with different situations, the four themes proposed in this section can be found in each study.

The adjustments that were made to the Adelaide objectives in response to the criticisms made earlier brought them into greater convergence with the paradigm of the four themes. Thus if the themes had been explicitly adopted in the Adelaide study the objectives would not have been open to the criticisms that were levelled against them.

Finally, do the four themes contribute to meeting the recent criticisms of transport planning, as outlined in Section 2.3? They involve a recognition of the interactive role of transport in the urban system, expression of social equity, environmental enhancement and resource limitations. Their contribution, however, is not direct but rather through the change in paradigm that would be involved in their adoption. For transport planning approach and values to change to those reflected in the four themes, it must have come to terms with the criticisms explored earlier.

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12. SEE, for example, paragraph 432 in DEPARTMENT OF PUBLIC WORKS, 1970; *Hobart Transportation Revision, 1970*, Government of Tasmania. This contains the only, and very brief, reference to the environment affected by a particular proposed urban freeway.

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3. TRANSPORT PLANNING IN HOBART

3.1 Introduction

The aim of this chapter is to review transport planning in Hobart since the 1960's in the general perspective pertaining to transport planning described in Chapter 2.

The objectives are to :

- review publications and current initiatives dealing with transport planning in Hobart;
- describe any changes in attitude and approach to transport planning in Hobart since the 1960's;
- associate changes in transport planning in Hobart with changes that have occurred elsewhere.

The chapter is divided into two sections :
Section 3.2 deals with the first objective;
Section 3.3 is concerned with the second and third objectives and introduces material to illustrate some of the effects of recent transport planning decisions in Hobart.

3.2 Transport Planning Publications and Initiatives in Hobart

3.2.1 *Hobart Area Transportation Study*[1] *1964*

This was one of the first Transportation Studies conducted in Australia and is typical of the genre as the following statement of intent illustrates. "The Hobart Area Transportation Study was conceived and carried out to provide the information necessary to project probable future levels of travel demand by all modes of private and public transportation. A long-range programme for transportation system improvements was prepared to satisfy these demands[2]".

A four-stage model was used in the prediction of probable levels of travel demand in 1985. A very crude approach was used with some sensitive input parameters, for example the exponential growth in Hobart's population following the 1939-45 war was extrapolated to 1985, and since the latest census data used in the Study was from 1961, this constituted a 24 year exponential extrapolation. The predicted population of the study area for 1976 was about 170,000, compared with the 1976 census value of 145,000[3].

The major recommendation of the report was a total of 46 kilometres of new freeways, together with a second Tasman Bridge adjacent and parallel to the present one and a further river crossing (the old floating bridge, if still structurally sound) at Dowsings Point. No public transport investment program was proposed.

The public transport emphasis was placed entirely on motorbuses, and it was recommended that the urban passenger rail service be closed. Ferries were not mentioned in the Summary Report, although it was considered elsewhere in the Study that there would not (by 1985) be enough demand to sustain a profitable passenger ferry service. The lack of comment was effectively a dismissal of the ferry service in view of the fact that the Transport Commission, the ferry operator, closed the ferry services the year before the Hobart Area Transportation Study was released.

The Hobart Area Transportation Study was concerned with providing facilities for motor vehicles. The Study was totally demand oriented, with no recognition of supply limitations in terms of high economic, environmental or social costs. The traffic projections assumed no constraints, for example in central city parking, and hence the recommendation of the Hobart Area Transportation Study was for a road system that would not constrain the traffic that would be generated in a system without constraints.

The Hobart Area Transportation Study was accepted, in principle, in 1964 by the government of the day and provided the direction of Hobart's transport planning until the publication of the Hobart Transportation Revision in 1970.

3.2.2 *Hobart Transportation Revision*[4] *1970*

The main aims of the 1970 Revision as stated in the terms of reference were : "Firstly, link Hobart data into a series of known methods and computer programs leading to a continuous evaluation and, secondly, to reappraise community objectives, population and travel forecasts, and the actual transport network to meet the demonstrated objectives and needs[5]."

The Hobart Transportation Revision was a revision, not a new plan, so its thrust was still to provide for unconstrained vehicle use. This was acknowledged in the report : "... the predictions of travel by both public transport and private automobile assumed that future travel by private automobile would not be constrained by restricted parking facilities or road space[6]."

The upgraded projections differed, in some areas, quite markedly from those of the Hobart Area Transportation Study, but there was no acknowledgement of any frailty in the basic methodology of projecting demand and designing road schemes to satisfy that demand.

However, broader issues were canvassed, at least in the Introduction where it was stated that : "Firstly, the general planning problems which required investigation were :

- Public transport
- Parking policies
- Alternative land use arrangements
- Financial constraints
- Community values[7]".

The report does not contain accounts of any investigations into these planning problems. It was recommended that a detailed public transport study be undertaken, and one of the objectives would be "to divert as many persons as possible from private automobiles to public transport[8]". This sentiment seems to be at odds with the rest of the report which is concerned with facilitating the use of the private motor vehicles, and its impact on the demand for the freeway network was not considered. Public transport was to be encouraged by putting the buses on the freeways. The proposed public transport study did not eventuate, which points to the continued low priority of public transport.

The section in the report dealing with parking did not investigate any alternative policies, and was restricted to projecting parking demand.

The planning problems in the areas of alternative land use arrangements, financial constraints and community values were only addressed in so far as it was recommended that a permanent Transportation and Planning Policy Committee be established with a fairly broad brief. It was "suggested that it would be advantageous for a planning group to be established to undertake a study of alternative land uses. This study would be required to evaluate the major urban growth forms in relation to social, economic and community objectives[9]". Since the Hobart Transportation Revision was published nothing

has been done in this area* which indicates an acceptance by policy makers of the demand oriented approach of the Hobart Area Transportation Study, continued through the Hobart Transportation Revision.

The sections on public transport and on planning indicated a degree of dissatisfaction among some members of the study team with the narrowness of the brief for the Hobart Transportation Revision which was to revise the Hobart Area Transportation Study without really questioning it. What dissatisfaction there was, however, did not produce any significant changes in planning emphasis. For example, while the initiatives in public transport are restricted to a recommendation to undertake a study, the Revision contains plans of specific freeway intersections. While community values were deemed worthy of investigation, there was no facility for public participation.

3.2.3 *Review of Northside Freeway*[10] *1972*

The 1970 Hobart Transportation Revision was advised that the Northside Freeway should be considered a committed project, but was required to examine the impact of the Freeway on the city, both in total and in the various stages of construction[11].

* Except to some extent the Hobart Metropolitan Area Strategy Plan (see Section 3.2.6) which however was concerned with the identification rather than the evaluation of alternatives.

It did not do this, but recommended that a detailed study be undertaken. It was recommended, in respect of the Northside Freeway, that "all changes permitted to buildings and the use of land during this period should be so directed that the ultimate environment objectives of the community are progressively achieved[12]". As mentioned in the previous section, the Revision did not attempt to determine these objectives.

Following the release of the 1970 Revision a study of the Northside Freeway was commissioned. The basic objective was to "determine the desirability and necessity of the Northside Freeway[13]". However, the development of alternatives was based on the "prime requirement that any scheme should be able to accommodate the vehicluar traffic forecast for 1990 by the Hobart Transportation Revision[14]".

Thus even the recognition that there were social and environmental problems associated with the construction of urban freeways did not affect the basic demand oriented planning approach. The result was that instead of a review of the Northside Freeway, the study produced plans for three alternative northside freeways and compared them in terms of transport economics, highway planning, environmental aspects, social aspects, and town planning considerations. The "survey of public attitudes" consisted merely of putting plans of the alternatives on public display and inviting the public to submit comments.

From the Review of the Northside Freeway it can be deduced that in the early 1970's there was some sort of realisation that there were non traffic impacts of specific construction projects that should be considered, and perhaps be used to decide between alternatives. But the alternatives would still be generated to meet projected traffic demand. Of course, the report was restricted by the brief which, as stated above, required that traffic demand be the criterion used to determine the necessity of the freeway. Thus although it is quite feasible that a more comprehensive study could have been undertaken, there was no move in this direction by those responsible for framing the brief.

Despite the production of the Report a deal of controversy still sourrounded the Northside Freeway proposal in regard to the financial costs and environmental issues. The Council of Hobart Progress Associations was reported in the Saturday Evening Mercury of 23rd June, 1973 to be opposed to the freeway and debate on the issues was carried in the local press. In July, 1974 the Hobart City Council withdrew its support for the Northside Freeway.

Thus the Review of Northside Freeway and subsequent events provide evidence to suggest that by 1972 the traditional transport planning assumptions were being questioned in Hobart (although apparently not in any depth by those responsible for framing the brief for the Review of the Northside Freeway) and that by 1974 there was a good deal of disillusionment with the "solutions" generated in the transportation studies.

3.2.4 *Parliamentary Publications*

There have been two recent parliamentary publications dealing with aspects of Hobart urban transportation. However, these should not be considered as initiatives in transport planning but rather as investigations into certain aspects of the transport system, and this is made clear in the reports.

1. *The Report of the Royal Commissioner on Tasmanian Urban Public Passenger Transport, 1974*[15]

   This Report, as distinct from some of the submissions presented to the Commissioner, did not attempt to define any role for public transport, and was mainly concerned with specific operating details of the present system.

   It was seen that there was a problem of traffic congestion, and this could be alleviated by control of the motor car. The recommendations in this area were mainly in the control of commuter parking, and improving the operating conditions for buses in the central city.

   Although most of the recommendations of the Report were concerned with operational details, two proposals represented a break with prevailing practices. One was concerned with a public relations and marketing campaign by the Metropolitan Transport Trust to attract increased patronage. In the section of the Report dealing with the Commissioner's visits to American and English cities he noted initiatives in these areas that were absent in the Tasmanian operations. The other proposal was to establish a planning group to co-ordinate transport planning and development in Tasmanian

urban areas. This is similar to one of the recommendations of the Hobart Transportation Revision (see Section 3.2.2).

Neither of the above proposals went any further : no plans for upgraded M.T.T. services or public relations and marketing campaigns were published, and an urban transport planning group has not been established.

2. *The Report of the Legislative Council Select Committee : Hobart Passenger Bus and Ferry Services, 1976*[16]

This short Report was concerned with private bus and ferry operations. Its recommendations were aimed at ensuring profitability for private operations, and it was not concerned with general issues of bus and ferry transport.

3.2.5 *Hobart Metropolitan Area Strategy Plan*[17] *1976*

This Report was published by the Southern Metropolitan Master Planning Authority in 1976. The Authority was based on representation from local councils, but since it did not have the support of all the local councils in the area, its influence was rather limited.

The report discusses several land use options and considers the transport component (among others) from a demand orientation. To quote from the section dealing with Regional Planning Implication : Transport

> "The following implications are based on the assumptions that vehicle traffic demands, where possible, will be catered for during the next decade, and that current projects already planned will be able to be funded as anticipated[18]".(*)

In this way, despite the broad nature of a strategy plan, the Metropolitan Area Strategy Plan takes quite a functional view of transportation, and makes no connection between transport facilities and environmental considerations either in the section on transport or the section on environment. For example, one of the recommendations was :

> "No major restrictions should be based on the provision of commuter parking facilities[19]".

and it was not stated whether this would involve further expansion of on street suburban parking or the construction of new city car parks. The implications for the inner suburban environment or the needs of pedestrians and the recreational facilities of the city were not pursued.

In the area of commuter car travel the Hobart Metropolitan Area Strategy Plan and the City of Melbourne Strategy Plan (see Section 2.5) take completely opposed positions : it is encouraged in the Hobart plan and discouraged in the Melbourne plan.

* This includes, for one land use option, the Northside Freeway at a cost of $20 million, only $2.9 million more than the 1972 estimate contained in the Review of Northside Freeway. This small increase may not be very realistic in view of the inflation that occurred between 1972 and 1976.

3.2.6 *Tasmanian State Strategy Plan; Consultant's Report No. 4 - Transport in Tasmania*[20] *1976*

In the Introduction and brief requirements several areas with application to urban passenger transportation are mentioned : the possible role of ferries in reducing car commuter movements; the relationship between catering for parking demand, public transport and development; the need to review and summarize all relevant transport reports; the need to discuss with the appropriate authorities the status of such reports and to document progress to date and problems associated with implementation; the need to detail transport strategies presently proposed; the need to identify the likely effects of a continuation of present transport policies and to highlight problems associated with conflicting aims.

However, the report does not focus on any of the issues of urban passenger transportation, and deals almost exclusively with the economics of the present Tasmanian transport system. The topics mentioned above are not considered in the report. The short section on urban public transport only describes the present bus system, and only in terms of route kilometres, passenger journeys and financial cost.

Thus, despite the brief requirements, this report does not contribute to transport planning in Hobart. There is a possible implication from the lack of comment on urban transport planning that the transport insitutions with which the consultant had dealings were not dissatisfied with the prevailing planning approach.

3.2.7 *Traffic Management Committee*[21] *1977*

The Tasman Bridge collapsed following a collision in January 1975, and was re-opened in October 1977. The Traffic Management Committee was established by the State Government in October, 1976 (21 months after the collapse) to investigate short-term low-cost measures which might be needed to relieve traffic congestion after the re-opening.

Members of the committee were drawn from the Department of Main Roads, the Transport Commission, the Metropolitan Transport Trust, municipal councils, the Royal Automobile Club of Tasmania, the Australian Railways Unions and the Traffic Control Branch of the Tasmania Police.

The committee determined that its scope was bounded by existing policies and practices which generally applied to road traffic in Hobart, although, when it was established, it was given a free hand with its work.

The committee engaged itslef in several planning exercises aimed at increasing the accessibility of the central business district by motor vehicle. These included the establishment of the Davey Street-Macquarie Street one way couplet, signalizing the railway roundabout, and constructing a slip road through the railway yard (which meant that trains could not be moved into or out of the Hobart railway station during peak periods).

A major survey of eastern shore commuters was commissioned, and this indicated that public transport might attract a fairly

high degree of utilization. However, no policies were proposed to encourage commuters to use public transport following the re-opening of the Tasman Bridge. A "sink or swim" policy was adopted for the ferries : the terminal facilities would continue to be provided for only a few months after the re-opening of the Tasman Bridge (presumably until their Federal Government funding ran out).

Transit lane proposals for high occupancy vehicles from the western end of the Tasman Bridge to the city were considered and rejected. The proposal for a bus priority lane in Collins Street was shelved until after further future developments. No solution was proposed for any parking problem that might result from increasing access to the central business district for private motor vehicles.

The Committee's deliberations and planning proposals provide evidence to indicate that satisfying the wants of peak period motorists was still, in 1977, regarded as the paramount transport planning task.

3.2.8 *Other Reports*

Other reports commissioned by transport agencies in the last few years have been the Hobart Roads Needs Study[22] and various parking studies[23]. These were inventories, and were concerned with providing data for planning exercises rather than transport planning itself.

3.2.9 *The Derwent Region Transportation Study (Study Specification) 1978*

Preparations for the D.R.T.S. began in October, 1977 and at the time of writing the Study had not been completed, and no results or recommendations had been published. This description is therefore based only on the Study Specifications[24].

The approach of the D.R.T.S. has been to consult with organisations, groups and individuals in determining a study methodology appropriate to the Hobart area and the goal of determining "how future transport policy and investment might best serve the overall interests of the people of the Derwent Region[25]".

The preliminary investigations led to the adoption of terms of reference relating to the study's conception of community expectations. These terms of reference include considerations of regional goals, local environment, alternative sources of funding, alternative management methods, monitoring and revising procedures, and the development analysis and reporting of "desirable, acceptable, and financially feasible transport strategies involving the integrated management of roads, all forms of public transport, parking and land use[26]", recommending traffic management, public transport, parking, and road construction programs and reporting on their implications in land use, environmental, social, energy resource terms. The time horizon for the study is 1990.

The Study is being undertaken as five broad tasks :

"Core Study Team Activities (Data Collection)

Regional Highway System

Regional Land Use

Public Transport

Local Area Studies[27]"

with extensive use of consultants.

It is evident that the approach employed by the D.R.T.S. is completely different to that of previous studies in Hobart, and this point is pursued in the next section.

3.2 An Assessment of the Hobart Experience

The objectives of this section are to :

- describe any changes in attitude and approach to transport planning in Hobart since the 1960's.
- associate changes in transport planning in Hobart with changes that have occurred elsewhere.

The objectives are considered simultaneously and some features of the Hobart transport system are introduced to illustrate the direction of past planning initiatives.

Not all the reports reviewed in the last section are included here. The Parliamentary Publications, the Consultant's Report to the Tasmanian State Strategy Plan, the Hobart Area Strategy Plan and roads needs and parking inventories were shown in Section 3.1 to be of peripheral importance in the evolution of

of transport planning in Hobart.

The planning initiatives considered here have more of a character of watersheds in the Hobart experience of transport planning. They are :

- the Hobart Area Transportation Study, 1964
- the Hobart Transportation Revision, 1970
- the Review of Northside Freeway, 1972
- the considerations of the Traffic Management Committee, 1977
- the Derwent Regional Transportation Study (Study Specification), 1978.

From the mid 1950's through to this decade transport planning has been dominated by the "transportation study", an approach that was outlined in Section 2.1. The major aim of the transportation studies was to provide free mobility for private cars, and to this end population and motor vehicle ownership were projected, some mathematical modelling of trip generation and distribution performed, and a road system designed to meet the projected demand.

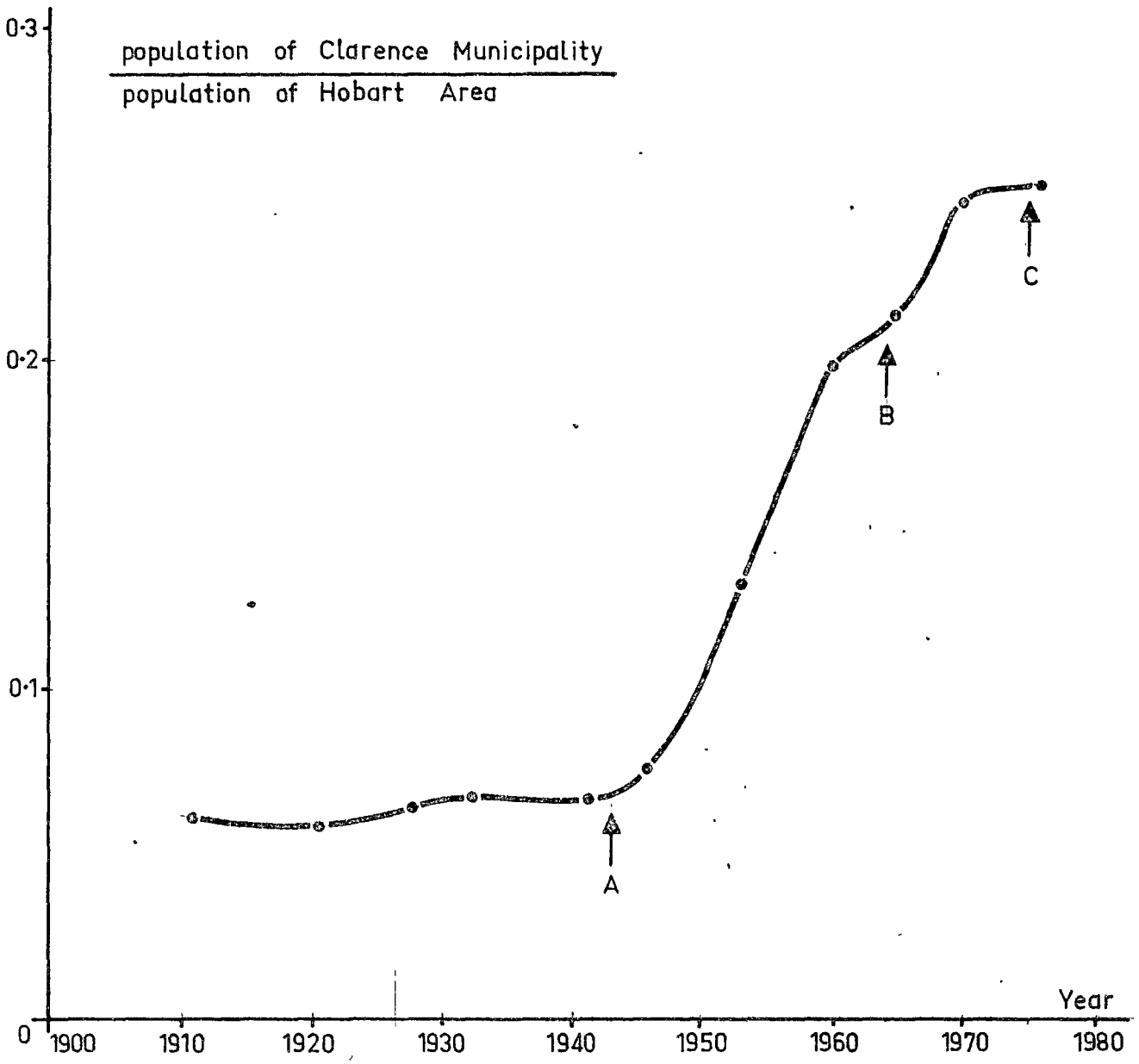
This approach was employed in Hobart with the Hobart Area Transportation Study in 1964, and the major result was a plan detailing 46 kilometres of new freeways. The recommendations represented a massive change in Hobart's transport system, and although the Report was quite specific about the trip generation equations used for each mode, it did not go into any detail on the impact of the recommendations on land use in the area.

At the time of the Study (1964) Hobart was experiencing a large change in its population distribution due to the increased accessibility of the Eastern Shore. This relationship between accessibility and residential land use is illustrated in Graph 1 which shows the ratio of the population of the Clarence Municipality to the population of the Hobart area since the early part of this century. The bulk of the Clarence population live in metropolitan Hobart, so Graph 1 effectively represents the proportion of the population of the Hobart area living on the Eastern Shore.

This proportion remained fairly constant until the opening of the floating bridge (1943). A large increase then occurred, tapering off in the early 1960's. After the Tasman Bridge was opened (1964) there was a further increase in the proportion of the population living on the Eastern Shore. The small increase between 1971 and 1977 was during a period when new residential areas on the Eastern Shore were losing their accessibility advantage over other developing areas. This was particularly the case for the Kingston area; the opening of the Southern Expressway (1970) had more than halved the travel time to the city, which became less than from developing areas on the Eastern Shore. This is reflected in the number of building applications in the Municipalities of Clarence (containing residential eastern shore areas) and Kingborough (containing the Kingston area) which are detailed in Table 2.

GRAPH 1

The Change in the Ratio of the Population
of the Municipality of Clarence to the
Population of the Hobart Area



A Opening of the floating bridge
B Opening of the Tasman Bridge
C Collapse of the Tasman Bridge

Source : Census data (A.B.S.)

TABLE 2

Annual building applications in the Clarence and Kingborough Municipalities, with reference to the number of building approvals in the Hobart and Southern Areas

Year	Building Applications in Clarence a.				Building Applications in Kingborough b.	
	Number of Dwellings		Number of flats/ home units		Number of buildings (all types) c.	
1964-65	230	(18)[e]	1	(1)	155	(12)
1965-66	211	(21)	0	(0)	138	(14)
1966-67	235	(17)	10	(9)	305[d]	(22)
1967-68	354	(21)	16	(6)	355	(21)
1968-69	668	(52)	80	(28)	230	(18)
1969-70	492	(38)	59	(11)	224	(18)
1970-71	391	(33)	53	(14)	197	(17)
1971-72	431	(36)	229	(39)	259	(22)
1972-73	536	(33)	163	(29)	415	(26)
1973-74	597	(35)	108	(19)	467	(27)
1974-75	172	(13)	21	(5)	460	(35)
1975-76	195	(12)	19	(3)	574	(36)
1976-77	140	(9)	16	(3)	n.a.	

a. Obtained from the Reports of the Clarence Council Building Supervisor
b. Obtained from the Building Inspector's Office, Kingborough Council.
c. Disaggregated data were not available.
d. Bush fires in this period caused widespread destruction of buildings, especially in the Kingborough municipality.
e. The figures in parentheses are the preceding numbers expressed as a percentage of building approvals in the Hobart and Southern Areas (source: A.B.S., 1973; Building Industry 1972-73, A.B.S., Hobart. A.B.S., 1977; Building Industry 1976-77, A.B.S., Hobart.)

The fluctuations in the numbers of building applications in Kingborough were caused by the replacement of buildings destroyed or damaged in the 1967 bush fires and the opening of the Southern Expressway in 1970. The number of applications to build new dwellings in Clarence peaked in 1968-69, the year before the opening of the Southern Expressway. The Tasman Bridge collapsed in January 1975, severing the fast road route for Eastern Shore residents to employment, services and recreation on the western shore. The number of applications to build new dwellings in Clarence fell by about 70% in the years following the bridge collapse.

The above material illustrates the intimate relationship between transport links and population distribution in Hobart, and points to the inappropriateness of recommending massive changes in the transport system without specifically considering land use effects, as was the case with the 1964 Study.

One of the major criticisms of the transportation study approach that was discussed in Section 2.3 was its narrowness : the lack of detailed considerations of land use effects in the 1964 Study is an example; and parts of the 1970 Revision indicate that this criticism was being recognized at that time.

Thus while the 1970 Revision was constrained by its brief, basically to adjust the 1964 Study in the light of new data which was at odds with the 1964 Study's projections, it did acknowledge the existence of broader issues. As stated in Section 3.2.2, the Introduction to the Revision contained

reference to planning problems concerning public transport parking policies, alternative land use arrangements, financial constraints and community values. However, because the 1970 Revision was a revision of the 1964 Study and not a new study, it was characterized by basically the same planning approach of the 1964 Study : demand orientation without consideration of limitations imposed by environmental, social and financial costs, and without considering supply limitations within the transport system, for example in central city parking.

The criticisms of the transportation study approach, discussed in Section 2.3, can be applied to the Hobart experience of the 1964 Study and 1970 Revision. Briefly, the criticisms were :

(1) projections of "what people do now" can accentuate disadvantages;

(2) the results were not feasible; and

(3) the approach was too narrow in conception.

1. *Projections of "what people do now" can accentuate disadvantages*

The mobility of public transport users is determined by the routes and timetables of public transport, whereas the mobility of car users is determined by the provision of road facilities. Thus non-car users have an inherent mobility disadvantage. Between 1963 and 1975 the number of vehicles per head (excluding motorcycles) rose in Tasmania from 0.33 to 0.47, an increase of 42%[28]. While road facilities were provided that encouraged the use of this increasing number of vehicles, public transport users were faced with declining services : between 1969 and 1975

the density of bus operations by the Metropolitan Transport Trust fell from 24,343 to 19,849 vehicle kilometres per average route kilometre[29]. In addition, the passenger suburban rail service was discontinued in 1975 and government support for the ferry service has been withdrawn.

Over half of the journeys on the Metropolitan Transport Trust bus fleet were at concession rates[30], which indicates that most of the bus users are children, students and pensioners.

These and others who do not have access to cars when they need them are captives of the public transport system, and their mobility has declined while the transport policy has been to increase the mobility of car users.

An example in Hobart of how disadvantages can be accentuated is provided by one of the effects of the Davey Street-Macquarie Street one-way couplet. Buses from the city do not now pass the concentration of doctors' and dentists' surgeries in Macquarie Street, and so although some car drivers have to use a more circuitous route they can still access the area directly, whereas bus users are not in the same position unless they approach from the south. Thus costs accrue to public transport users, but the benefits are gained by peak period car users through the increased capacity of that particular corridor. These considerations were not mentioned in the 1964 Study, which originally recommended the couplet, and neither were they mentioned in the 1970 Revision.

In a period of increasing car ownership a planning approach that projects "what people do now" and then attempts to satisfy the projected demand must produce the situation outlined above. This is because any increase in car use and decline in public transport use when projected two decades (as was the practice in the transportation studies) can become very significant, and of course when services are provided or curtailed in response to these projections feedback effects can make them a self-fulfilling prophecy.

2. *The results are not feasible*

The Hobart Area Transportation Study (1964) proposed 46 kilometres of new freeways. With the exception of one freeway, this plan was retained in the Hobart Transportation Revision (1970). These plans represent remarkable resource consumption, not only financial but including the opportunity value of the land that would be taken up in road construction.

One result of the extensions to the transport system in the last two decades has been a decline in the inner suburban housing stock. The extent of this change in land use may be estimated from a comparison of aerial photographs from 1957 and 1975. Table 3 and Map 3 contain details of the housing loss and an example is shown in Figure 1.

A study of the social characteristics of different residential areas[31] indicates that the houses that were demolished for road transport facilities (as shown in Map 3) were in areas of low cost housing, which is a resource of limited availability.

TABLE 3

Losses in the inner suburban housing stock caused by extensions to the road transport system

Construction	Number of Houses Demolished[a]
Brooker Avenue widening	71
Burnett Street extension and widening	28
Regent Street extension and widening[b]	14
Southern Expressway construction[c]	28
Carparks[d]	
3004	25
1805 and 1806	22
2902	15
231	10
214	6
2804	5
3401	5
222	5
Others combined	26
TOTAL	260

a Estimated from a comparison of 1957 and 1975 aerial photographs

b Located to the south of Map 3.1

c Located to the south east of Map 3.1 (see Map 1)

d The location of the car parks is described by their block number in Map 3.1

MAP 3

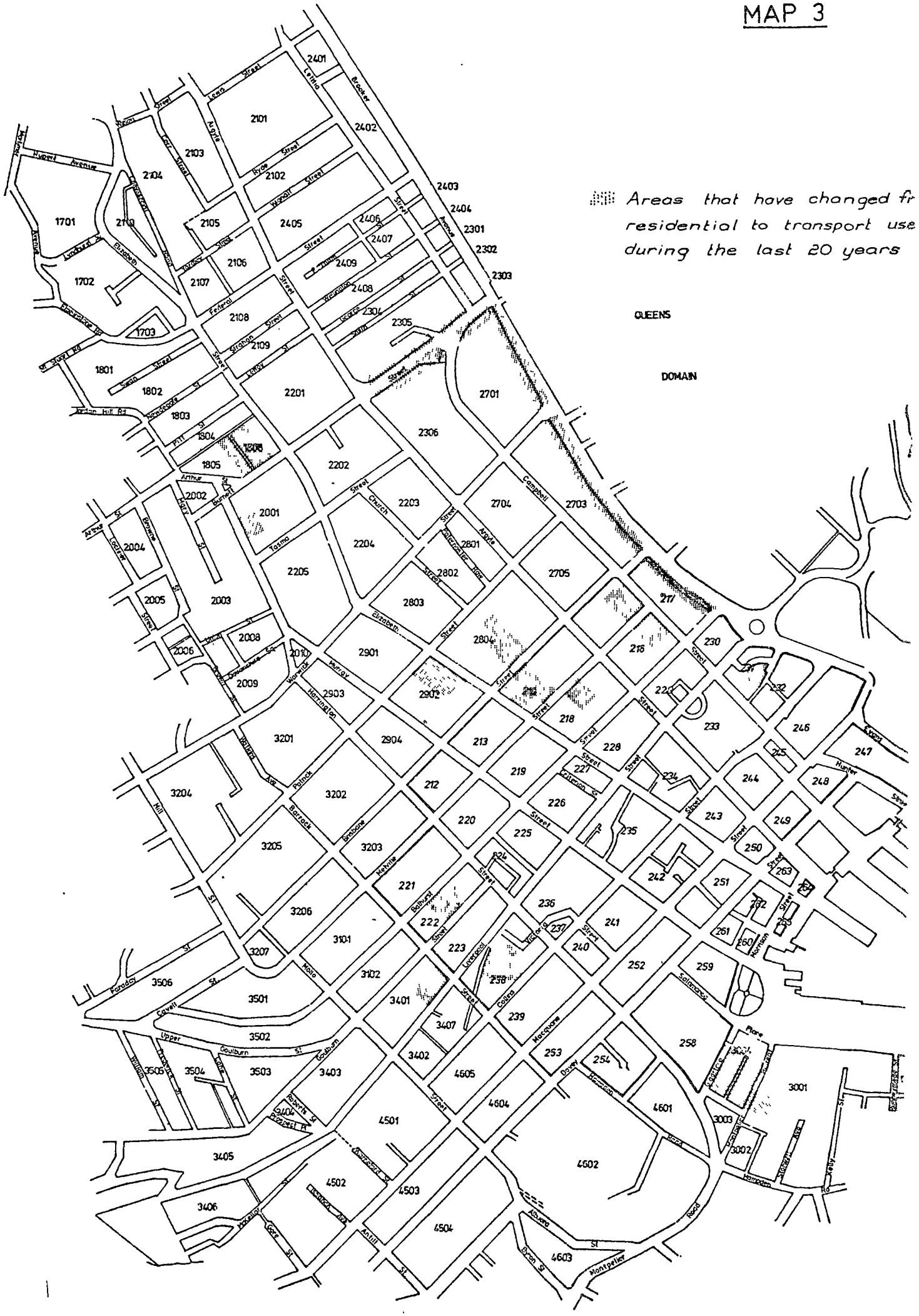

Areas that have changed fr residential to transport use during the last 20 years
QUEENS
DOMAIN

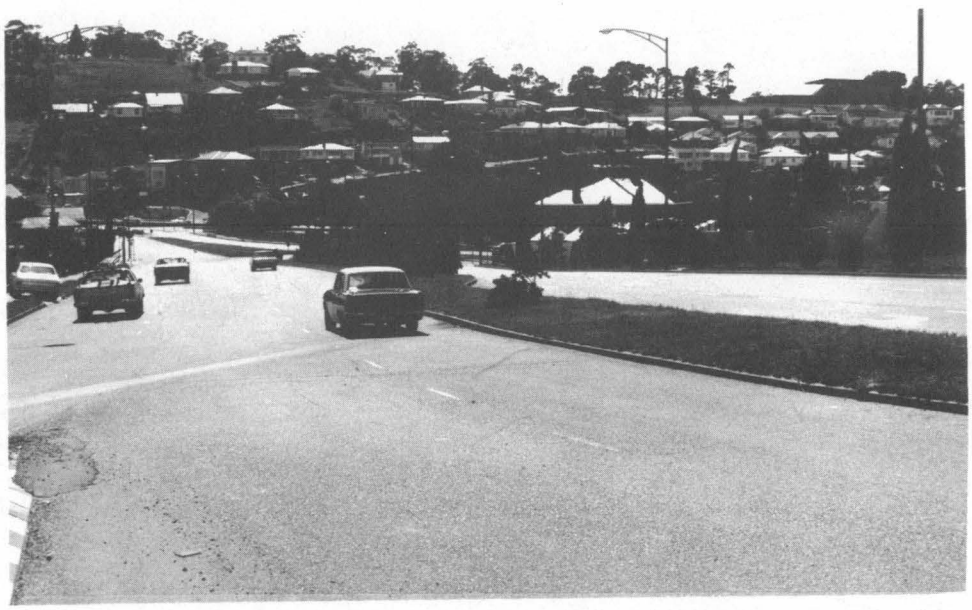
FIGURE 1

Burnett Street extension and widening.

1957

1975

Source: Lands Department,
Hobart.



A view of the extended and widened part
of Burnett Street, (January 1978).

The displaced residents have contributed to the expansion of the outer suburbs and possibly become part of the commuting movement from those areas, adding to the demand for more road facilities.

Moreover, the recommendations of the 1964 Study, carried through to the 1970 Revision, involved a greater consumption of the inner suburban housing resource. One of the proposed freeways (the Northside Freeway) would have required the demolition of about 200 houses[32].

The transportation studies were accepted by the governments of the day and yet many of the resource consuming proposals have not been acted upon, particularly freeway development in built up areas. This indicates that although there was approval of the plans they were not feasible in terms of resource allocation.

3. *The approach was too narrow in conception*

The transportation study approach viewed transport as an isolated activity, although it is plainly interactive within the urban system. In the Hobart Area Transportation Study (1964) areas of potential residential growth were identified and expected future demographic values were inserted in the trip attraction, generation and distribution model. This, however, did not take into account the effect of any accessibility changes on the demographic values.

An example of the shortcomings of the approach used in the Hobart Area Transportation Study (1964) is that it was assumed that there would be no restrictions on central city parking,

and this assumption followed into the Hobart Transportation Revision (1970).

In adopting the transportation study approach in Hobart parking supply has been kept ahead of demand. The Hobart Area Transportation Revision states that, in 1970, total parking supply exceeded demand by 27% but to satisfy the demand projected for 1990 the total number of spaces would need to be increased by about 70%[33]. Parking data from the Hobart Area Transportation Revision is presented in Tables 4 and 5.

In Table 5, under long-term parking, the number of parkers is less than the maximum accumulation. This is not possible since the accumulation is the number of vehicles parked at a given time and must be less than (or equal to) the total number of parkers for a period including that time. It is possible that the figures 13500 and 12800 were reversed. If this was the case the projected shortfall in long-term parking is the difference between the number of parkers (13500) and the number of spaces (6595) or 6900.

In the 1971 parking updating study the inner suburban residential areas were shown to have an accumulation of 50% during the day, and so it can be expected that these residential streets will attract more commuter parking. This conclusion was also reached by the 1971 updating study which stated that parking spaces in these areas "can be expected to have a greatly intensified use over the next few years[34]". Moreover, since there were only

TABLE 4[a]

Summary of parking supply and usage recorded in the 1970 inventory

Location of Parking Spaces	No. of Spaces Available			Maximum Accumulation
	Short Term	Long Term[b]	Total	Total
C.B.D. -				
On-street	1411	25	1463	1285
Off-street	3197	1370	4567	3238
Total	4608	1393	6003	4516
Fringe -				
On-street	610	3480	4090	n.a.
Off-street	2313	1720	4033	n.a.
Total	2923	5200	8123	5698
TOTAL	7531	6595	14126	10214

a From DEPARTMENT OF PUBLIC WORKS, 1970; *Hobart Transportation Revision, 1970*, Government of Tasmania, p. 26.

b Over 4 hours parking duration

TABLE 5[a]

Projected parking demand for 1990

Projected Demand	Type of Parking		
	Short Term	Long Term	Total
Maximum Accumulation	6500	13500	20000
Number of Parkers	67000	12800	80000

a From DEPARTMENT OF PUBLIC WORKS, 1970; *Hobart Transportation Revision, 1970*, Government of Tasmania, p. 26.

about 600 vacant kerbside spaces in these areas[35], commuter parking might well extend to adjacent residential districts, depending on the distance people are prepared to park from their place of work.

Thus the recommendations of the 1964 Study and the 1970 Revision involved either large scale encroachment of commuter parking in inner suburban residential areas or the construction of major new parking facilities in the city centre. These implications were not analysed in the reports, for example, in the way a major new parking facility would affect traffic flow in the city centre.

The area of energy use provides another illustration of the shortcomings of the functional planning approach. The characteristics that were encouraged : outer suburban growth rather than infill development, private motor vehicle use rather than the provision of attractive public transport, are associated with high energy use. Transport operations account for over a quarter of the nation's energy use and it is generally expected that by 1985 Australia will face an annual oil import bill in the vicinity of $2500 million. While it may be unreasonable to expect planners in 1964 to have foreseen any limitations in fuel supplies, it is not unreasonable to expect them to have valued flexibility and planned a system with the capability to adapt in changing situations. There can be few plans less flexible than those that concentrate spending on the provision of freeways from the city centre to areas with the potential for suburban development.

Increased traffic flow and all day parking provide environmental costs to inner suburban residents. Noise, air pollution and the risk of road accidents all increase with the traffic flow that arises from the dominant use of private motor vehicle as a commuting mode. In some areas (principally the southern suburbs) residential streets are used as access to the central city area from major arterial highways, and traffic is generated by the availability of all-day parking in many inner suburban areas. This commuter parking restricts the use of those streets by residents, medical and social workers, and tradesmen.

Non peak period road users pay an amenity cost for traffic management programs which are designed to facilitate peak flows. These include a complex and expensive system of traffic lights at the railway roundabout and a system of one-way streets that can make navigation in the city quite a challenge, especially to out-of-towners, as well as increasing the length of many city journeys and hence generating more traffic.

Thus the criticism of traditional transport planning, that it is too narrow in conception can be applied to the Hobart experience which provides evidence of the lack of concern of the transportation study approach for the related issues discussed above.

Some of these issues were recognized in the Review of Northside Freeway, 1972. This review was a comparison of the environmental, social and highway planning effects and the costs of the Northside Freeway (from the 1964 Study) and alternative methods

of meeting the projected (from the 1970 Revision) 1990 traffic demands. Town planning effects and community attitudes were also mentioned although not considered in any detail.

Since the alternatives had to provide a capacity sufficient to satisfy unconstrained projections of traffic growth they were effectively reduced to variations of the Northside Freeway rather than alternatives to it.

The evaluation of the three schemes used a checklist approach (see Section 2.4). There were four major evaluation areas :

- total costs (construction and acquisition)
- highway planning factors
- environmental aspects
- social effects

A number of factors were considered in each area, and these were combined to give each scheme a rating of good, fair or poor for each evaluation area except total costs which were expressed in dollars.

These ratings did not have a formal input in the final evaluation. This rejected one scheme, mainly because in the long term it would need to include the Northside Freeway to meet the projected demand, and recommended a construction program that in the short and medium term would be common to both the other alternative scheme and the Northside Freeway, and putting off the final decision between the two until the long term.

Thus a criticism of the Northside Freeway review is that the evaluations in each area did not seem to be very important in determining the final recommendations. However, no scheme stood out in all areas, and so the lack of a clear "winner" may be advanced as a possible justification for the recommendations which preserve options on the final decision.

The Northside Freeway review has several similarities to the Geelong Study described in Section 2.5. In both, three alternatives were compared in social, environmental and highway planning effects; and in both the alternatives were generated to meet projections of future traffic demands. Both are therefore representative of a phase in transport planning in which environmental and social issues were recognized as important and had a role to play in deciding between alternatives. They did not, however, play any direct role in generating the alternatives.

One of the recent developments in transport planning described in Section 2.4 has been the emergence of the concept of transportation systems management (T.S.M.). This is a collective term for a set of adjustments to the transport system that does not include major construction. The emergence of T.S.M. is reflected in the Hobart experience by the approach of the Traffic Management Committee (1977).

This Committee was established to investigate short-term low-cost measures which might be needed to relieve traffic

congestion after the re-opening of the Tasman Bridge. Its investigations included transit lane proposals, signalization schemes, the establishment of one-way streets and minor road construction.

The programs that were adopted were all aimed at increasing the flow of vehicles into and through the city centre : the traffic lights on the railway roundabout, the sliproad through the railway yard, the Davey Street-Macquarie Street one-way couplet. No policies were adopted to encourage the use of public transport after the bridge re-opening. The transit lanes were not recommended.

Thus the programs that the Traffic Management Committee recommended were in line with the thrust of the 1964 Study and 1970 Revision, concentrating on increasing the accessibility of the central business district to motorists. This too is a characteristic of T.S.M., operating within the bounds set by broad strategic goals. In this case these are from the 1964 Study and 1970 Revision, providing facilities to meet projected demand and not trying to shape that demand.

The latest watershed in the Hobart experience of transport planning is the Derwent Region Transportation Study (D.R.T.S.), which is currently being undertaken. As mentioned before, the Study has not yet reported, and no discussion papers have been released from which inferences might be made of the Study's direction. Thus all comments made here are based on the Study Specifications.

The approach being used by the D.R.T.S. is completely different to those of the Hobart Area Transportation Study, 1964 and the Hobart Transportation Revision, 1970 which were the previous area wide studies.

In contrast to these studies, D.R.T.S. did not impose a planning methodology but, through consultation with organizations, groups and individuals sought to design a study approach appropriate to the local situation.

At this stage it is impossible to judge the degree of success met by these efforts. A possible consequence is a bias towards the wants of groups of people who are organized but not necessarily representative of the community, and this point was made in Section 2.5 in the discussion of the formulation of the planning objectives for Adelaide.

The study approach of the D.R.T.S. is, in a sense, the reverse of previous approaches. It starts by analysing specific issues in local areas : the central area, southern suburbs, eastern shore, and so on; and then it considers the regional consequences of measures proposed to deal with the local issues. This is in contrast to, say, the 1970 Revision and the Review of Northside Freeway, 1972, where the Revision produced a "master plan" for the area and recommended that local issues be investigated, and the Review of Northside Freeway attempted to fit a link of the master plan in an area with as little damage as possible while maintaining the regional purposes of the link. It is also in contrast to the approach used in Adelaide

which defined three planning phases, each more specific and dealing with smaller regions than the last (see Section 2.5).

In Section 2.5 reference was made to three areas of changing transport planning emphasis in Australia, as viewed by Fisher. These were :

> "A nation-wide push towards a multi-modal approach to transport has both raised the importance of Transport Ministries relative to functional agencies, and led to some successful, albeit limited, steps to transport planning proper;
>
> The Australian Government has widened its involvement in transport funding to almost, if not all, modes and matched its funds by a positive involvement in both planning and programming;
>
> There is a realisation that the planning cannot be effective as a private, technical and engineering function; instead it must involve the public and other professions in procedures, few of which are susceptible to computer modelling[36]".

The D.R.T.S. reflects these changes in the Hobart experience.

Firstly, while the 1970 Revision was prepared by the Department of Public Works (with a Consultant), the D.R.T.S. Specification states that "to help in establishing the independence and objectivity of the Study Team, it is considered important that it does not operate from offices of any of the participating agencies[37]". This can be seen to be an effort to indicate that the dominant transport planning role of functional agencies has been downgraded. Further evidence of this change is given in the statement that "... independent conduct of the study is essential to ensure that institutional goals and objectives are not substituted for community goals[38]".

Secondly, the Australian Government's involvement in the study includes both funds and personnel.

Thirdly, the approach described in the D.R.T.S. Specification does involve the public through consultation with community groups, and it is stated that "The Study Team will contain representatives of disciplines such as :- Economics, Engineering, Environmental Planning, Human Geography, Land Use Planning, Operations Research, Social Planning and Transport Planning[39]".

After reviewing the changing emphasis in transport planning, Chapter 2 contained a proposal for four transport planning theses. These were :

1. Optimum accessibility to opportunity and resources for all sections of society while promoting a land use configuration consistent with these and other community aims.

2. A transport system that does not impinge upon the perceived positive aspects of the urban environment and is instrumental towards enhancing them.

3. The means for all sections of society to satisfy their transport needs whether or not they have the use of a private motor vehicle.

4. A transport system that makes good use of existing resources and can adapt to meet demands imposed by changing resource availabilities.

This chapter will conclude by discussing the extent to which these themes are represented in the D.R.T.S. Specification.

Theme 1 : The principal goal of the D.R.T.S., "to determine how future transport policy and investment might best serve the overall interests of the people of the Derwent Region[40]" could be taken to imply a recognition of accessibility to opportunity and resources as a social need. Theme 1 is also directly addressed in the first item of the terms of reference "to determine how future transport policy and investment might assist in the achievement of desirable regional development goals and objectives[41]".

Theme 2 : The second item of the terms of reference is specifically concerned with Theme 2. It states that the Study is "to determine how transport policy and investment might contribute to the maintenance and enhancement of the quality of the local environment throughout the region[42]".

Theme 3 : Public transport considerations are part of the third term of reference, and an indication of its importance in the study is that it is the subject of one of the four major planning studies in the D.R.T.S.

Theme 4 : This is not directly addressed in the Specification apart from the fifth part of the third term of reference which states "to report on the implications

> of the recommended transport strategy in land use, environmental, social, energy, resource terms[43]". However, the question of making good use of existing resources is likely to be a part of all of the major planning studies due to the emphasis on investment considerations in the terms of reference.

Thus the four themes proposed in Section 2.6 can be found, to varying extents, in the D.R.T.S. Specification. Of course, terms of reference in study specifications can be one thing and the output of the study another, as was the case with the Consultant's Report : Transport in Tasmania for the Tasmanian State Strategy Plan (see Section 3.1). However, this is most unlikely to be the case with the D.R.T.S. because the terms of reference were developed as part of the study, rather than being a possibly unrealistic statement of intent imposed before the start of the study.

The four themes effectively place transport planning in the context of environmental management. Their representation in the D.R.T.S. Study Specification indicates the change in transport planning emphasis in Hobart. The final step in the move away from functionalism must be the explicit recognition that transport planning is concerned with contributing towards the achievement of environmental and social goals, and that it can be guided by the adoption of the four themes proposed in this thesis.

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POST SCRIPT : Some thoughts on institutional problems

Various institutions are involved in transport planning, and in New South Wales 28 Federal, 53 State and 222 Local Government Agencies as well as private organisations have been identified[1]. A similar situation exists in Hobart, and the institutional division of responsibilities has not changed with the nature of transport planning, resulting in a structure that is not appropriate to contemporary planning needs. Thus we have the Department of Main Roads, responsible for highways which include some limited access major arterials and the Tasman Bridge, the Transport Commission has responsibilities in traffic management, the Local Councils control parking and most urban streets, the Metropolitan Transport Trust is responsible for public bus operations, the Housing Department is responsible for public housing development, and several other bodies are concerned with land use planning.

In a discussion paper of transport planning in Sydney it is stated that :

> "Urban problems are sufficiently complex to defy neat division into functionally separate units, particularly in the planning phase. Many 'real world' problems do not neatly divide up on the same basis as current planning responsibilities in Sydney.
>
> The fragmentation of planning effort has tended to make the achievement particularly of environmental objectives but also of social objectives difficult. Bodies with discrete and limited responsibilities tend to see broader social or environmental goals as peripheral to their principal task. Environmental and social aims tend to cut across all sectors and tend to require mutually reinforcing action to be taken in more than one sector[2]".

This statement has clear application in Hobart in view of the institutional division of responsibilities described above.

Changes in planning approach should be accommodated institutionally to be effective and this involves an organisational commitment. "However the mere collection of currently disparate planning groups together under a single administration does not ensure comprehensive multi-modal transport planning[3]".

The Sydney study goes on to talk about options for co-ordination and concludes that it would not be possible to establish a body solely responsible for all facets of urban planning[4].

The approach described above with an emphasis on co-ordination is in accordance with a consensus model of society. "Consensus models of society emphasise the structural and normative integration of social systems, and reduce conflict to the status of a transitory phenomenon[5]". Co-ordinating bodies can internalize conflict into a consensus model, without identifying and recognizing the importance of the individual conflicts.

In contrast "conflict models emphasise the endemic and structural nature of social conflict, with society being characterised as a plurality of values and beliefs which correspond to the range of conflicting material interests within the society[6]".

An approach to transport planning under this model would rely on the advocacy of particular institutions and groups in a

public forum utilizing, say, the press and parliament. A problem is the likely entrenchment of dominant institutions and this could be a fruitful area for further study.

Hensher saw the emphasis in urban transport planning changing "the requirement to produce concrete results to a preoccupation with the process by which the results are produced[7]". This he described as a change towards a mutualist-form :

> "the mutualist-planning paradigm emphasises the participatory nature of planning, in which the community is viewed as possessing resources of ideas and information, and planning organisational structure becomes more fluidly non-mechanical and interactionist[8]"

and the major present challenge was to effect a change in

> "the institutional context ... to truly reflect the operation of representative planning[9]".

These institutional questions are outside the scope of this report, but should clearly be involved in any further discussion of change in planning paradigm.

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